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Algoa Fruit & Nursery Co.
ALGOA, TEXAS

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The Satsuma Orange For Profit

By R. H. BUSHWAY
Expert Orchardist
Algoa, Texas

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THE SATSUMA ORANGE
FOR PROFIT IN TEXAS

Address of R. H. Bushway, of Algoa, Texas, before the Texas State Horticultural Society, held at College Station, July 28th, 1909:

The word "profit," which appears in the title subject which I am to discuss, knocks all sentiment to the four winds and brings the question down to one of dollars and cents.

I might have seen fit to take another point of view than that of sordid gain, because aside from the moneys received there is something attached to the planting of oranges that is different from any other fruit, and which brings out the best there is in the horticulturist and attracts to the industry the very best class of men who are looking for an opening, both pleasant and profitable.

Truly, there is nothing that should so appeal to a man as to be able to watch the development of the orange from its delicate, white, perfumed flower to the fully matured fruit, and especially when you add to this the fact that in any district where oranges can be grown nature has been lavish in preparing the way for man, and he can surround himself with innumerable tropical and semi-tropical fruits and flowers unknown to the peoples of other districts. However, I do not wish to encroach upon the time of this assembly unnecessarily, and will try to confine myself strictly to the financial side of the question.

THE CITRUS TRIFOLIATA STOCK.

Orange growing in Texas is of very recent origin, that is, from a commercial standpoint. While they have been grown for home use along the Gulf coast since the advent of the white man, it was in a careless, haphazard way, and no effort was made to select varieties having special merit or hardiness. The introduction of the Citrus Trifoliata changed all this. It was first shipped into our State to be used as a hedge, very much as the old bois d'arc was at one time planted in the North Central States. It is more likely that most of the planters had do idea that it belonged to the citrus family, as the botanical term, "Citrus Trifoliata," conveyed to them no particular information. It was only brought to the attention of the public as an orange stock when experiments had carried it through to maturity and produced the finished product. Even then it was found not to be adapted to all varieties of oranges, and not until the Satsuma was reached did we find the best, and to date the only one that has proven superior and best when worked on the hardy stock. There are various reasons for this. First, the Satsuma is of itself a semi-dwarf plant, and as the Trifoliata stock has a tendency to dwarf whatever is worked upon it, the combination seemed to be exactly what was wanted.

While the Citrus Trifoliata comes to us from Japan, it is claimed by investigators to be a native of Abyssinia, going from there to Japan and thence to the United States.

THE ORANGE BELT.

The humid belt of the Gulf Coast Country of Texas, or to be more exact, the district south of Houston, having an annual rainfall of not less than 40 inches, a black loamy soil with a clay subsoil not more than three feet below the surface, proves the ideal home of this stock, and it is in this district that the only large successful development work in orange culture is going forward. While they have been tried in other districts, it has been found that the Trifoliata stock will not do well in any soil having the least trace of alkali, and it is now the opinion of those who have watched the industry for many years that the growing of this particular orange and stock will always be confined to the humid belt. It is quite likely that an effort will be made to push the industry beyond the known territory, very much as is always done in an old field, but from a practical business standpoint it would seem to me to be the height of folly for planters to go outside of the proven district, while there is splendid land of known value that can be had for orchard purposes.

THE QUESTION OF STOCKS.

And now just a word about stocks. First, I would indelibly impress upon your minds the fact that the Satsuma orange and the Trifoliata stock are one and inseparable, and must always be considered together. Years of experience has proven the fact that the Satsuma when budded upon sweet or sour stock is practically worthless, and all orchards of this char-

acter have had to be consigned to the brush pile. Notwithstanding that this fact has been reiterated time and again, both in the press and from the rostrum, would-be experts, or those having special interest at stake, have contended, through ignorance or stupidity, to advocate the Satsuma on sweet and sour stock in districts where the Trifoliata can not be grown. This change would not be detrimental to most varieties of oranges, but with the Satsuma it has been proven absolutely beyond question, and in every instance where trees have been worked upon other than Trifoliata stocks loss has followed.

WHAT THE TRIFOLIATA IS.

A word of explanation as to what the Trifoliata is, mostly for the benefit of the laymen. This stock is a member of the citrus family, and the only known citrus tree in the world that is deciduous; in other words, that sheds its foliage during the winter and becomes perfectly dormant, just as much so as will any deciduous forest or fruit tree. This characteristic is what makes the tree hardy, and when we work the tender evergreen orange on this stock it imparts this same characteristic; or, in other words, the Trifoliata conveys this tendency to become fully dormant during the winter to the scion, and this gives us the hardy orange that will resist a temperature of 8 degrees above zero without injury, when a freeze of 26 degrees above zero would destroy the tree if worked upon the common stocks. So much for the stock.

THE QUESTION OF SOILS.

During my 18 years of experience in the fruit business of Texas, I have not only investigated orange conditions throughout the entire coastal plain, but my own experiments have covered many years, and have been carried on under all the conditions which surround us, and I have tried all soils, from the lightest sand to the heaviest black waxy. My experience, which is confirmed by every orange grower of standing in Texas, proves that the medium and heavy soils are best, although sandy soils with a clay subsoil have also given good results.

In selecting a location for an orchard the question of soil should be carefully considered, and in the light of past experience I would select, first, a black sandy loam; second, a heavy hogwallow land, such as is found along our bayous.

PREPARATION.

Having secured a location, the prepartion of the soil is the next important step, and this must be done thoroughly, or you will lose your investment. Do not be misled to believe that you can give our tough prairie lands one or two ploughings, set out your orchard and make a success. Nothing is further from the truth. I have planted hundreds of acres of orchards, and before a tree goes into the ground the entire tract must be in the same state of cultivation as though I were going to plant cotton, corn, strawberries, vegetables, or any other crop. The land is plowed, disked, plowed and redisked, and this is continued until sometimes

we give as many as five plowings, each one followed by the disk or harrow.

The element of time also enters into the work, and though you might spend $100.00 worth of work in ten days on an acre of our raw prairie land, and it would be apparently in fine condition, it would not be suitable for planting orchards, for the simple reason that the land must go through rotting processes and chemical changes before it will give up the food elements essential to the growth of the tree. I place the latest time at which you can take our raw prairie land and get it ready for orchard planting to be November 1st. This gives practically five months for the land to be put in cultivation, and in which to subdue its wild nature.

DRAINAGE.

Of course the question of drainage is a large factor in all of our South Texas district, and at present it would be worse than suicide for an investor to locate outside of one of the numerous drainage districts now being constructed. Drainage is essential, as the tree will not stand wet feet, nor will it give the very best results unless your soil is sweet and open, and this condition can not be created where water stands on the ground.

SELECTION OF TREES.

The most vital question which confronts the grower is that of trees. First, they must be genuine Satsuma oranges budded or grafted on Trifoliata stocks. Second, they should be quickly grown, healthy, vigorous, and free from dis-

ease. The size of the tree is of little importance, so that it has vigor. I would much rather take a tree with one foot of top that has grown quickly and under favorable conditions than to take a great big tree that has been stunted by lack of cultivation or moisture. The ideal tree is one having a three-year-old Trifoliata root and a one-year-old Satsuma top. The system employed by the best propagators makes this trees as nearly perfect as possible.

First, the seed is planted in the seed bed, and at the end of the first year we transplant in narrow rows. A year later the buds are inserted, and after another year's cultivation the tree is ready for the orchard. This gives a good, strong, vigorous root with a quickly grown top.

The tree question has been a very difficult one since the industry has been established and profits well assured. Planters have been compelled to defer their work or take such trees as might be offered. This has led to a great deal of loss. Stocks in Florida and Texas have been exhausted each year, and the profits on the trees have been such that heavy importations have been made from Japan, and they have proven far from profitable to date. Understand, I am now speaking from the standpoint of the grower and orchardist. As a nurseryman, I am one of the largest importers of orange trees in the United States, but only for protection to my trade and to the planters; and I would much rather pay double the price for a home-grown tree that I would pay for an imported tree. In fact, it is safe to say that 75

per cent of all trees imported from Japan last year are now dead. But the importers are profiting by experience, and with a better packing system it is to be hoped that future shipments will arrive in better order and give better results.

While on this question of trees, I would call your attention to the fact that the genuine Satsuma orange as grown in the United States is absolutely thornless, nor has any grower ever discovered a thorn on a tree, while the imported trees show quite a number of thorns, and consequently give rise to the question as to whether or not they are what is known to us as the Satsuma orange. Personally, I am of the opinion that they are the true Satsuma, as the wood has all the characteristics common to this tree, both as to the shape of the leaf and manner of growth.

PLANTING.

Planting is done during the months of December, January and February, very few large planters setting any trees until after the first of the year. The tree should be root-pruned, about one-half the foliage removed and set the same depth as it grew in the nursery.

Careful investigation confirms the present distance of planting, which is 15x15 feet, being 193 trees per acre. While this distance has been questioned by many, it is only natural that there should be a difference of opinion, but actual experience and careful investigation prove that trees set 15x15 will not crowd under ten or twelve years, and as your revenue is

upon the tree basis it is important that you get as many trees as possible on the acre.

Prof. Kyle, State Horticulturist, made an inspection of the orchards in the Algoa district some time ago, and we found trees eight years old only six and eight feet apart that had never missed a crop, and while they were somewhat crowded, they were full of fruit at very possible point, and were producing a large and profitable crop year in and year out. It is useless to cultivate two acres of land to get one acre of results, and that is just what you are doing when you do not get your full number of trees on your acre of land.

CULTIVATION.

Do not be misled into believing that you can grow a crop between the rows without damage to your orchard. It is as impossible to grow two crops on the same land at the same time without one of them suffering as it is for two bodies to occupy the same space at the same time. Orange growing is so profitable in South Texas that the grower is certainly justified in giving the orchard the full use of the land upon which it is planted. If it is necessary for him to have vegetable crops growing for an income during the formation period of his grove, reserve land for that purpose and plant less orchard.

Of the utmost importance to the success of your work is the culture of the orchard. This should be thorough and continuous from March 1st until October 1st following. We keep our orchards just like a garden during this period.

Do not allow grass or weeds to grow, and keep the surface soil worked into a thorough, soft dust mulch that makes it resistant to drouth. This is necessary from the time work starts until the time in the fall for dormancy, which makes a continual, substantial growth, and this can not be had unless the cultivation is just what it ought to be. On a bearing orchard, however, especially a young one, cultivation in the spring should not start until the fruit is well set. This would probably be about April 1st. We have found that early cultivation of a fruit orchard has a tendency to stimulate the wood growth and causes the fruit to shed.

PRUNING.

Little pruning is necessary; only enough to shape your tree and keep long, irregular limbs from coming out where they do not belong.

WINTER PROTECTION.

As a protection against frost we bank up around our trees in December, throwing the dirt high enough to cover 8 to 12 inches of the Satsuma wood; then in case of a freeze we would only lose our tops, and this has happened only once during the twenty years of my residence in the Gulf Coast Country, hence the danger is very slight. However, it is good insurance and should be followed as a practice just the way that you would take out a policy against fire for your buildings.

The question of further protection I notice will be covered under the head of "Wind Breaks

for Citrus Groves." From my own observation I am strongly opposed to wind breaks, for the simple reason that where the tree is protected from early colds it does not reach the same degree of dormancy that the unprotected tree does, and no protection, at least of the ordinary sort, will do any good against the heavy freeze when it comes, and the tree being sappy goes down. This was demonstrated the past winter by the trees on the south side of a building close to our orchards. The cold defoliated them entirely, and this year they are without a fruit, while orchards 600 feet away and without protection were uninjured, and are today bearing a splendid crop.

MARKETING.

Right down at the bottom of all our orchard work we find the question of marketing, and this is something that must receive an immense amount of attention from our growers in the near future. The only way that this question has ever been solved successfully is where a large acreage is concentrated at one point and either controlled by a few individuals or by an association working under one head. As long as California had small, scattered groves she never successfully marketed her crop. When, however, a few larger districts were opened up and many hundreds of acres planted in a body under one control they began to bring order out of chaos, and were in position to command not only the best of rates and service from the transportation companies, but they were able to go before the broker and commis-

sion men and offer him large quantities of the fruit, insuring a uniform and regular supply with grades and quality guaranteed.

Texas will soon be up against the same proposition, as the oranges are being planted in small groves scattered over a large territory, and to the prospective planter I would say that if you wish to enter this industry, go where the plantings are large and the market will be assured. In the Algoa Orchards we now have the largest plantings of Satsuma oranges in the United States, and will put out at least 500 acres more this coming winter. This will insure us the attention of buyers, and when a broker in the North or East wants a Satsuma orange, his mind will at once revert to Algoa, where the large acreage is. He will not think of the man who has a five or ten-acre tract, because he knows that he could not make over one shipment. It is safe to say that the fruit grown in a large way at one point will be worth at least $1.00 per box more than that from scattered orchards here and there.

The largest orchardists in the Coast Country have just completed the organization of the Texas Orange Growers' Union, and will take steps at once to find markets for the fruit and educate people to eat the Satsuma.

There is no doubt but what this organization will become the main factor in marketing our fruit, as it is composed of practically all of the best and largest growers and under the best of management.

In this work we should have the support of all planters, as it is the only organization of

the kind in the South Texas field, and will make many thousands of dollars for the industry as a whole and for its membership as individuals. For full information, address J. H. Arbenz, Secy., Sarita, Texas.

A so-called government expert who came into our district at a time when there was no fruit on the trees made the statement that the market for Satsuma oranges was very limited, and that the price was steadily going down. Our experience has been just the reverse; but to prove that his statement is absolutely wrong, I will call to the witness stand that veteran horticulturist, G. L. Taber, of Florida, and quote from his writings as follows:

"It has been stated of the Satsuma that prices are much lower in Florida than they were many years ago, presumably on account of over-production; and that there has never been a sufficient demand for the fruit to justify plantings that would produce carload shipments. My books do not show these statements to be correct. My first shipment of Satsumas in 1893, consisting of 171 boxes, netted $2.50 per box. In 1894 there were 284 boxes, netting $3.00 per box. Since then I have shipped in varying quantities, reaching as high as nine carloads in a single season. In 1907, 14 years after I commenced shipping Satsumas, I received the highest price I ever obtained. Some in less than carload lots sold as high as $8.00 per box. The carload shipments of that year netted $3.42 per box, a considerable advance in carload lots above the box shipments of earlier years. In the fall of 1908, the last crop, I shipped six car-

loads of Satsumas, and the price was 1 3-4 times as much as that received for standard varieties of round oranges. Bear in mind, that all figures above given, with the exception of $8.00 per box, are net prices for entire crops, all shipping and marketing expenses deducted. Also, that all sales are made through regular commission houses or at auction."

Does that look to you as though the markets would not care for the Satsumas? When they were first put on the market you will note that they netted $2.50 per box. Last year they netted $3.42 per box, 92 cents higher than they were 14 years ago, when they were first offered to the public.

The statement that the Satsuma can not be marketed is absolutely absurd on its face, as it is without doubt the finest orange the world has ever known. Give a man a Satsuma and he will never rest until he gets another—will never be satisfied with any other. And I have seen fruits selling, not only on the local markets, but in the markets in the North, at from 10 to 20 cents per dozen more than the product of California or Florida. The dealers state that while they have the Satsuma to offer they can sell nothing else unless they make a wide difference in price.

OUR ADVANTAGE.

Did it ever occur to you the advantages which we have over other districts when it comes to the growing of these oranges? First, there is very little land in Florida that will grow the Satsuma orange—in fact, it is stated by the best

authorities that Texas has 1000 acres to their one adapted to this fruit. Second, they can not be grown anywhere successfully in California owing to the alkali soil. We have then in the production of this orange eliminated the two older orange-growing districts, leaving us a clear field. Even if we had competition it would not be of great moment in view of the fact that we ripen our oranges fully 60 days ahead of any other district, and at the time when there is no other orange on the market except the cold storage stock. We have practically three months in which to market our fruit and a clean slate. The item of transportation alone gives us an immense advantage. We can ship our oranges to Galveston, Texas, thence to the Atlantic Seabord in five days at a less cost per box than California pays for icing charges, to say nothing of her exorbitant freight rates and the loss in transit which comes from their long haul. Further, we can lay our fruits down in the markets of the old world almost as quickly as California can deliver them to the Atlantic Seaboard.

There are conditions prevailing in South Texas which should create the largest orange producing section in the United States—rich soils, ample rainfall, an ideal climate, and the very best of transportation facilities to all the markets of the world, and an orange that matures and is ready to eat 90 days ahead of any other known. Take into consideration the further fact that in the older orange growing districts the raw land brings a price of from $300.00 to $1000.00 per acre, and that in the belt south

of Houston land can be secured from $40.00 to $75.00 per acre that will produce a superior fruit closer to market. Then consider that the Satsuma orange of Trifoliata stock produces a large and profitable crop the fourth year, while the other varieties require six and seven years. We certainly have all the advantages that could be asked. All we need now is enough men who will go into the work intelligently, and we will have the greatest orange district in the United States.

THE GOLDEN STREAM.

Mere statements often count for nothing, and it is only by comparisons that we are enabled to impress the mind. Therefore, I will revert to statistics, first to show the present revenue from citrus fruits in California, and then will try to convey to your minds the advantages of Texas.

Last year California shipped in round numbers 30,000 carloads of citrus fruits, bringing in a total revenue of over $30,000,000.00. These fruits were grown on an estimated acreage of 60,000, allowing a revenue of $500.00 per acre. Understand, that this fruit is grown where nature has done but little and man must fight every step of the way if he succeeds. Lands in the orange belt can not be bought for less than $300,00, and often as high as $1000.00 per acre. Then comes irrigation and fertilization, both of which are a perpetual tax on the investor, consequently the investment becomes heavy and the revenue correspondingly small.

In our own district, the Gulf Coast Country of Texas, the conditions are reversed. We have rich soils, consequently no fertilizer, ample rainfall, making irrigation unnecessary, and markets right at our door. The investment in an orchard in Texas would not be over one-third the cost of the same acreage in the older orange growing districts, and the revenue is much higher.

I checked the books of one of our best groweerse, Mr. N. E. Stout, and found that his five acres of five-year-old Satsumas paid him $2,-894.94, or very nearly $600.00 per acre. Other orchards have produced as high as $1600.00 per acre two consecutive years, and to date a crop failure has never been known. One of my neighbors has three-fourths of an acre of oranges, from which there has been gathered year after year from $400.00 to $700.00 worth of fruit. This orchard has received but very little culture during the later years, but continues to grow and fruit.

Why should not Texas have many thousands of acres of citrus fruits, bringing in a large and profitable income, and giving employment to thousands in a pleasant business. Within four years we should have not less than 10,-000 acres of bearing orchards, producing a revenue of at least $5,000,000.00 annually. All we require is men who will roll up their sleeves and go to work and profit by the experience of those who have pioneered the industry.